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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CONLEY, OI K

ART UNIT

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1795

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,908	Applicant(s) KAGAMI ET AL.	
	Examiner HELEN O.K. CONLEY	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/25/10.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 24, 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/16/06 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 1-4, 5, 7, 24 and 25, in the reply filed on 2/25/10 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted 5/19/06, 4/21/08 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

4. The drawings were received on 5/19/06. These drawings are acceptable.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1795

2. Claims 1-4, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueno et al. (US Patent 6,294,277).

Regarding claim 1, the Ueno et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.3) for generating power through an electrochemical reaction utilizing reactant gas and an operation mode of the fuel cell stack is determined base don a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (Fig. 5, S23)

Regarding claim 2, the Ueno et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.3) for generating power through an electrochemical reaction utilizing reactant gas and a voltage rising detection means for detecting a voltage rising condition of the fuel cell stack after supply of reactant gas is started (76) and a control means for determining an operation mode of the fuel cell stack is determined based on a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (Fig. 5, S23)

Regarding claim 3, the Ueno et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.3) for generating power through an electrochemical reaction utilizing reactant gas and a voltage rising detector for detecting a voltage rising condition of the fuel cell stack after supply of reactant gas is started (76) and a control for determining an operation mode of the fuel cell stack is determined based on a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (Fig. 5, S23).

Regarding claim 4, the Ueno et al reference discloses the voltage rising detector determined the voltage rising condition by determining whether a differential coefficient of a voltage value of the fuel cell stack with respect to time is determine to below 35V (negative value) or above 35V (positive value; 9:1-12)

Regarding claim 24, the Ueno et al. reference discloses the voltage rising detector (voltmeter) detects the voltage rising condition by measuring voltage or an average of at least a set of fuel cell placed near the end of the fuel cell stack (Fig. 3, 6:1-10).

3. Claims 1-4, 6, 24, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuglevand et al. (US Patent 6,387,556)

Regarding claim 1, the Fuglevand et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.1) for generating power through an electrochemical reaction utilizing reactant gas and an operation mode of the fuel cell stack is determined base don a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (Fig. 5, S23)

Regarding claim 2, the Fuglevand et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.1) for generating power through an electrochemical reaction utilizing reactant gas and a voltage rising detection means for detecting a voltage rising condition of the fuel cell stack after supply of reactant gas is started (92) and a control means for determining an operation mode of the fuel cell stack is determined based on a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (9:35-40).

Regarding claim 3, the Fuglevand et al. reference discloses fuel cell stack formed by stacking a plurality of fuel cells (fig.1) for generating power through an electrochemical reaction utilizing reactant gas and a voltage rising detector for detecting a voltage rising condition of the fuel cell stack after supply of reactant gas is started (92) and a control for determining an operation mode of the fuel cell stack is determined based on a voltage rising condition of the fuel cell stack that is detected after supply of the reactant gas is started (9:35-40).

Regarding claim 4, the Fuglevand et al reference discloses the voltage rising detector determined the voltage rising condition by determining whether a differential coefficient of a voltage value of the fuel cell stack with respect to time is positive or negative.10:10-22)

Regarding claim 6, the Fuglevand et al. reference discloses the control unit varies a value of load current obtained from the fuel cell stack in accordance with the voltage rising condition detected by the voltage rising detector

Regarding claim 24, the Fuglevand et al. reference discloses the voltage rising detector (voltmeter) detects the voltage rising condition by measuring voltage or an average of at least a set of fuel cell placed near the end of the fuel cell stack (6:55-65).

Regarding claim 25, the Fuglevand et al. reference discloses upon starting fuel cell stack below freezing, the control unit determines the operation mode of the fuel cell stack in accordance with the voltage rising condition detected by the voltage rising detector and operates the fuel cell stack in the determined operation mode (15:25-67)

Claim Rejections - 35 USC § 102/103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 6 and 7 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Fuglevand et al. (US Patent 6,387,556)

Regarding claim 6, the Fuglevand et al. reference discloses the control system selectively shunts the electrodes using switching devices corresponding to fuel cell to electrically bypass or deactivate the fuel cell which inherently varies the values of the load current by observing the characteristics of the voltage sensor (10:10-22).

Regarding claim 7, the Fuglevand et al. reference disclose the control unit can observes the voltage characteristics of a fuel cell as sensed via sensors is below (negative) a desired range but is silent in instructing the switching device to turn off and shunt the fuel cell when the voltage is above a desired range, however, such

Art Unit: 1795

characteristics are inherent because the Fuglevand et al. reference discloses that the fuel cell can shunt off which would inherently reduce the value of the load current. Thus the claimed limitations are anticipated. In alternative, in the event that the Fuglevand et al. reference does not teach switching device to turn off and shunt the fuel cell when the voltage is above a desired range, this feature would have been obvious because the Fuglevand et al. reference discloses the controller can switch the shunting device off. Common sense teaches that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of the patents together like pieces of a puzzle. A person of ordinary skill is also a person of ordinary creativity, not an automaton. The question to be answered is whether the claimed invention is a product of innovation or merely the result of common sense, ordinary creativity, and ordinary skill. **KSR v. Teleflex**

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno et al. (US Patent 6,294,277)

Regarding claim 25, the Ueno et al. reference discloses that upon starting the fuel cell in normal operating conditions, the control unit determines the operation of ht

Art Unit: 1795

fuel cell stack in accordance with the voltage rising condition detected by the voltmeter and operates the fuel cell in the normal operating conditions (8:55-65). The Ueno et al. reference is silent in disclosing starting the fuel cell in freezing conditions, however the Ueno et al. reference discloses the system is for a vehicle (7:10-20). Vehicles in the United States may endure freezing temperatures. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a fuel cell in a vehicle that would withstand start up conditions in freezing temperatures. Common sense teaches that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of the patents together like pieces of a puzzle. A person of ordinary skill is also a person of ordinary creativity, not an automaton. The question to be answered is whether the claimed invention is a product of innovation or merely the result of common sense, ordinary creativity, and ordinary skill. **KSR v. Teleflex**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELEN O.K. CONLEY whose telephone number is (571)272-5162. The examiner can normally be reached on Monday-Friday 8am-4:30pm.

Art Unit: 1795

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Helen O.K. Conley/
Examiner, Art Unit 1795